



A Study of Cytological Evaluation of Cervical Lymphadenopathy in Konaseema Region

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ABSTRACT

Background: Cervical lymphadenopathy is a common clinical problem that presents to us in day today clinical practice. The causes vary from simple treatable infections to malignancies which needs to be investigated. Fine needle aspiration cytology (FNAC) is simple, quick, inexpensive and minimally invasive technique that can be used as an outpatient procedure to diagnose them.

Aims and objectives: 1) To know the overall prevalence of various causes responsible for cervical lymphadenopathy.

2) To know the distribution of various lesions among the age & sex groups.

3) To emphasize the role of fine needle aspiration cytology (FNAC) in etiologic workup in significant cervical lymphadenopathy. **Material and Methods;** FNAC was performed on 90 patients who presented with cervical lymphadenopathy to department of Pathology over a period of 6 months

Results: The maximum numbers of patients (42.22%) were diagnosed as Tuberculous

lymphadenitis, followed by Reactive lymphadenitis (30%), Acute suppurative lymphadenitis (15.5%) and Malignant metastatic deposits (12.22%). Reactive lymphadenitis is the commonest cause of cervical

lymphadenopathy in pediatric age group, Infective in 11-40 yrs age group including Tuberculous and Suppurative lymphadenitis, Malignant metastatic disease in more than 40yrs age group.

Conclusion: FNAC is simple, quick, minimally invasive, and inexpensive diagnostic modality for the etiologic workup of cervical lymphadenopathy and is almost as sensitive and specific as excision lymph node biopsy when an adequate aspirate is examined by expert eyes.

Key Words: Cervical lymphadenopathy, FNAC, Tuberculous lymphadenitis, Reactive lymphadenitis

INTRODUCTION

Cervical lymphadenopathy is one of the commonest clinical presentations of patients attending the Outpatient departments in most hospitals. The aetiology varies from an inflammatory process to a malignant condition [1]. Fine needle aspiration cytology (FNAC) of lymph node has become an integral part of the initial diagnosis and management of patients with lymphadenopathy due to early availability of results, simplicity, and, minimal trauma with less complication. [2] FNAC has also been advocated as a useful method in comparison to expensive surgical excision biopsies in developing countries with limited financial and health care resources [3]. It almost offers an accurate diagnosis for reactive lymphadenitis, infectious disease, granulomatous lymphadenitis and metastatic malignancy. Thus, it can avoid the need for excisional biopsy in most cases [4]. In the present study we have analyzed the prevalence of various causes of cervical lymphadenopathy in the local population with special reference to different age groups.

AIMS AND OBJECTIVES:

1. To know the overall prevalence of various causes responsible for cervical lymphadenopathy.
2. To know the distribution of various lesions among the age & sex groups.
3. To emphasize the role of Fine needle aspiration cytology in etiologic workup in cervical lymphadenopathy.

MATERIAL AND METHODS

The study was carried out over a period of 6 months from January 2014 to June 2014 in Department of Pathology, Konaseema Institute of Medical Sciences and Research Foundation, Amalapuram of East Godavari dist in Andhra Pradesh. 90 Patients with significant cervical lymphadenopathy of various ages and both sexes presenting to various Outpatient departments were included in this study. The detailed clinical findings, relevant laboratory and radiological findings were recorded before performing FNAC. FNAC was performed on the representative cervical lymph node under strict aseptic precautions. The palpable cervical lymph node was fixed with one hand and a 22 gauge needle, attached to a 10 ml syringe was inserted into the lymphnode and full suction pressure was applied. The tip of the needle was briskly moved up and down and sideways a few times till a spot of material showed in the stem of the needle. The negative pressure in the syringe was then released

and the needle was withdrawn. The aspirated material was then blown on a clean glass slides using the same syringe. Smears were prepared on glass slides, few fixed in alcohol and few air dried, stained with Hematoxylin and Eosin and Leishman's stain. Necrotic aspirates were also submitted for Ziehl-Neelsen (ZN) staining for Acid Fast Bacilli (AFB).

RESULTS

90 patients with cervical lymphadenopathy included in the study who underwent FNAC, were in the age groups of 3yrs to 80 yrs. 64 patients (71%) were females and 26 patients (29%) were males with male: female ratio of about 1:2.4. 11 cases (12.22%) were in the age group of 0 - 10 years, 27 cases (30%) in the age group of 11-20 years, 16 cases (17.77%) were in the age group of 21-30 years, 10 cases (11.11%) in the age group of 31- 40 years, 12 cases (13.33%) in the age group of 41-50 years, 9 cases (10%) in the age group of 51- 60 years, 4 cases (4.44%) in the age group of 61-70 years and 1 case (1.11%) in the age group of 71-80 years. The maximum incidence of cervical lymphadenopathy was observed in the age group of 11-30 years. The cytological diagnoses were found to be benign in 79 cases (87.77%) and malignant in 11 cases (12.22%).

11 cases were in the age group of 0-10yrs, of which maximum 9 (82%) were Reactive lymphadenitis followed by Tubercular and Suppurative lymphadenitis (9%). 27 cases were in the age group of 11-20yrs, of which 15 (55%) were Tubercular lymphadenitis, 8 (30%) were Reactive lymphadenitis and 4 (15%) Suppurative

lymphadenitis. 16 cases were in the age group of 21-30 yrs of which 9 (56%) were Tubercular lymphadenitis, 5 (31%) were Reactive lymphadenitis, 2 (13%) were Suppurative lymphadenitis. 10 cases were in the age group of 31-40 yrs of which 5 (50%) were Tubercular lymphadenitis, 1 (10%) was Reactive lymphadenitis, 4 (40%) were Suppurative lymphadenitis. 12 cases were in the age group of 41-50 yrs of which 5 (42%) were Tubercular lymphadenitis, 2 (16%) were Reactive lymphadenitis, 2 (16%) were Suppurative lymphadenitis and 3 (26%) were Malignant metastatic deposits. 9 cases were in the age group of 51-60 yrs of which 2 (22%) were Tubercular lymphadenitis, 2 (22%) were Reactive lymphadenitis, 1 (11%) was Suppurative lymphadenitis and 4 (45%) were Malignant metastatic deposits. 4 cases were in the age group of 61-70 yrs of which 1 (25%) was Tubercular lymphadenitis and 3 (75%) were Malignant metastatic deposits. 1 case was in the age group of 71-80 yrs of Malignant metastatic deposits. (Table 1)

Of the various lesions diagnosed on FNAC, Tubercular lymphadenitis was the commonest with 38 (42.2%) cases followed by Reactive lymphadenitis 27 (30%) cases, Suppurative lymphadenitis 14 (15.5%) cases and Malignant metastatic deposits 11 (12.2%) cases. Tubercular lymphadenitis was commonest in the age group of 11-40 years whereas Reactive lymphadenitis was commonest in paediatric age group. Malignant metastatic deposits were seen above 40yrs of age.

Table 1: Age distribution and incidence of various lesions in Cervical lymphadenopathy

AGE GROUP	NO OF CASES	TUBERCULAR LYMPHADENITIS	REACTIVE LYMPHADENITIS	SUPPURATIVE LYMPHADENITIS	MALIGNANT METASTATIC DEPOSITS
0 - 10	11	1	9	1	0
11 - 20	27	15	8	4	0
21 - 30	16	9	5	2	0
31 - 40	10	5	1	4	0
41 - 50	12	5	2	2	3
51 - 60	9	2	2	1	4
61 - 70	4	1	0	0	3
71 - 80	1	0	0	0	1
TOTAL	90	38	27	14	11

DISCUSSION

Enlarged cervical lymph nodes are always accessible for FNAC and therefore, this procedure is of great importance in the diagnosis of non neoplastic and neoplastic disorders. It plays a significant role in developing countries like India, as it is relatively a cheap procedure, simple to perform and practically has almost no complications. The diagnosis offered on FNAC has been shown to correlate very well with histopathological diagnosis after biopsy.^[5-8]

The lesion arising in lymph nodes can be found in patients ranging from early to advanced age. In our study, the youngest patient with lymphadenopathy was 3yrs and the oldest one was 88 years old, similar figures were noted in a study by Steel et al.^[9]

We observed that the peak incidence of benign lesions was in the 2- 3rd decade while the peak incidence of malignant lesions was in the 5th decade which were consistent with the studies of Ahmad et al and Sarda et al. ^[10,11] Saluja and Ajinyka attributed the cause of the presence of

more malignancy in older age to the fact that adult or elderly patients often react to the infection with only slight to moderate lymph node enlargement; therefore, distinct lymphadenopathy in an elderly patient would arouse suspicion of malignancy and justify immediate needle biopsy.^[12]

In the present study the maximum number of cervical lymphadenopathy were due to Tuberculous lymphadenitis (42.2%) followed by Reactive lymphadenitis (30%) and Suppurative lymphadenitis (15.5%) which was consistent with the study of Jha et al.^[13] This etiological variation of patients of cervical lymphadenopathy may be due to variation in socioeconomic and nutritional status in different geographical locations of the world. Tuberculosis once thought to be under control has undergone a dramatic resurgence in the number of cases due to complacency and growing number of drug resistant strains. In our study, FNAC of these cases revealed epitheloid cell granulomas and caseous necrosis.

The study conducted by Maria et al reported reactive hyperplasia in 70 % cases, granulomatous lesion in 14 % cases and malignancy in 12 % cases. ^[14] We also found Reactive hyperplasia (82%) as the most common cause of cervical lymphadenopathy in children followed by Tuberculous and Suppurative lymphadenitis .

In the present study, Neoplastic lesions are the commonest cause of cervical lymphadenitis above 40 age group with Malignant metastatic deposits .In a study by Huifand et al malignancy was more common among patients who were at least 50 yrs old. Location of lymphadenopathy may be useful in predicting whether patient has cancer or benign disease and in their study 94% of patients with supraclavicular lymphadenopathy were diagnosed with cancer. ^[15]

Various studies have shown that Ultrasonography is useful in differentiating different causes of chronic cervical lymphadenitis in adults and pediatric age group. Ultrasonography helps in differentiating Tuberculosis, Lymphomas and Metastatic deposits. ^[16]

FNAC is a very useful and simple tool in the diagnosis of cervical lymphadenopathies. It is easy, performed in OPDs, and serves as a rapid modality for the diagnosis of the common curable causes of cervical lymphadenopathy. A cytological follow up of the lesions is also easily possible by FNAC study. It is almost as sensitive and specific as excision lymph node biopsy.

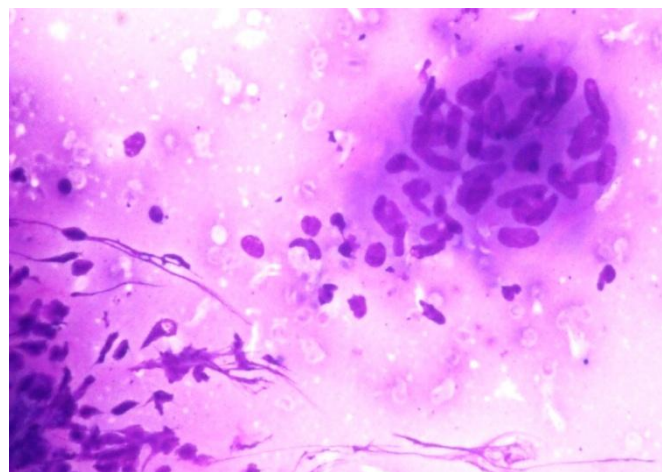


Figure I: Photomicrograph of Tubercular lymphadenitis showing clusters of epithelioid cells (Leishman x400)

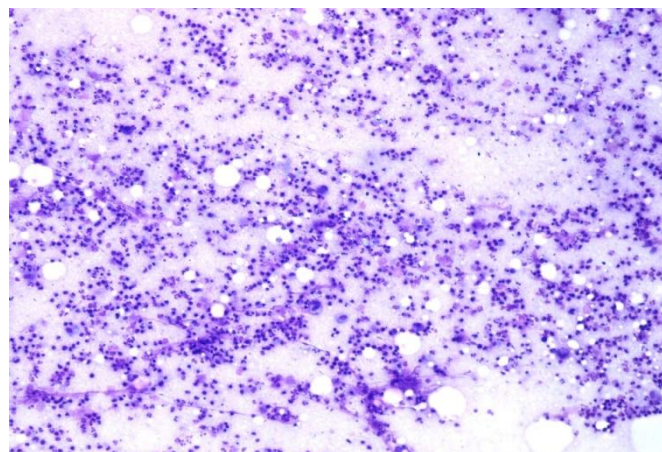


Figure II: Photomicrograph of Acute Suppurative lymphadenitis showing dense clusters of polymorphs (Leishman x100)

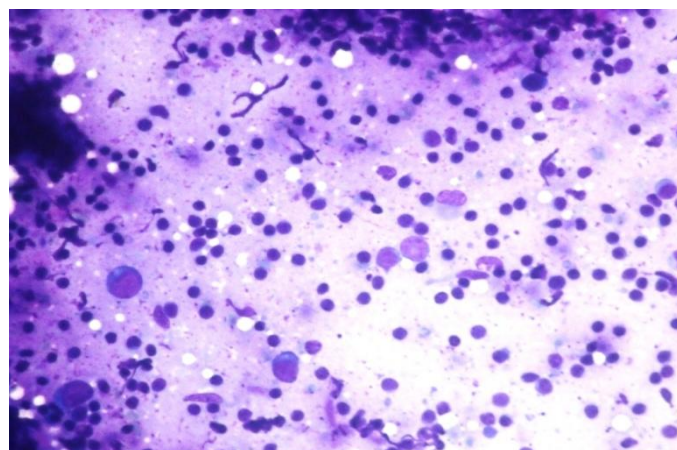


Figure III: Photomicrograph of Reactive lymphadenitis showing lymphoid population of cells (Leishman x400)

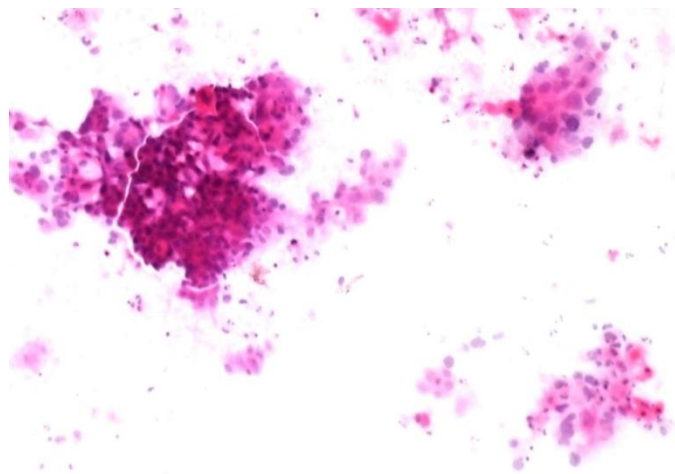


Figure IV: Photomicrograph of Malignant metastatic deposits showing malignant squamous epithelial cell clusters (H&E x100)

CONCLUSION

The study concluded that Tuberculosis is the most common cause of cervical lymphadenopathy in Konaseema region followed by Reactive lymphadenitis, Suppurative lymphadenitis and Malignant metastatic deposits. Most cases of cervical lymphadenopathy occur in the age groups of 11-40yrs. In pediatric age group, Reactive lymphadenitis is the commonest cause of cervical lymph node enlargement. Infective etiology is the commonest cause of cervical lymphadenitis in the age group of 11-40 yrs. Metastatic deposits are the commonest cause of cervical lymphadenopathy above 40 yrs age group.

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